

REMARKS

Applicants hereby request further consideration of the application in view of the amendments above and the comments that follow.

Status of the Claims

Claims 1, 3-30, and 40-45 are pending in the application. Claims 1, 3-5, 8, 13, 17-18, 21-23, 29, 43 and 45 stand rejected under Section 102 as being anticipated by U.S. Patent No. 5,695,567 to Kordina et al. (hereinafter "Kordina") in view of U.S. Patent No. 4,845,332 to Jancosek et al. (hereinafter "Jancosek"). Claims 1-5, 8-10, 12, 17 and 21-23 stand rejected under Section 102 as being anticipated by U.S. Patent No. 6,217,662 to Kong et al. (hereinafter "Kong"). Claims 24-25 and 30 stand rejected under Section 103 as being unpatentable over Kordina. Claims 6, 7 and 44 stand rejected under Section 103 as being unpatentable over Kordina in view of U.S. Patent No. 6,406,983 to Holzlein et al. (hereinafter "Holzlein"). Claim 11 stands rejected under Section 103 as being unpatentable over Kong in view of Holzlein. Claims 14, 17-20 and 26 stand rejected under Section 103 as being unpatentable over Kordina in view of U.S. Patent No. 4,860,687 to Frijlink et al. (hereinafter "Frijlink"). Claims 15, 16, 27 and 28 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

The Rejection under Section 112

Claim 24 stands rejected under Section 112 on the grounds that the claim fails to comply with the enablement requirement. The Action states:

In this instance the claim recites a liner which could be disassembled without disassembly of the susceptor, while it is disclosed in the specification (Page 7 lines 29-30) that at least one liner is fastened with a fastener and it appears that the other may require at least some partial disassembly.

Applicants respectfully submit that Claim 24 complies with Section 112, and that the Examiner may be confusing the "housing assembly" and the "susceptor" as claimed

and described in the specification. Referring to the exemplary embodiment described in the specification, the liner members **152, 154** and the top liner **160** can each be removed from the housing assembly **100** without disassembling the susceptor (which includes the bottom susceptor member **110**, the top susceptor member **120**, and the side susceptor members **130**). Thus, while partial disassembly of the housing assembly may be required, disassembly of the susceptor is not.

In view of the foregoing, Applicants respectfully request withdrawal of the rejection under Section 112.

The Rejections under Section 102

Under 35 U.S.C. § 102, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131 (quoting *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)). "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" M.P.E.P. § 2112 (citations omitted) (emphasis added).

A finding of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. *See Scripps Clinic & Research Foundation v. Genentech Inc.*, 18 U.S.P.Q.2d 1001 (Fed. Cir. 1991). Thus, anticipation requires that a single prior art reference disclose each and every element of the anticipated claim.

The Section 102 Rejection over Kordina

Claims 1, 3-5, 8, 13, 17-18, 21-23, 29, 43 and 45 stand rejected as being anticipated by Kordina in view of Jancosek. The Action states:

Applicant argues that the amendment to Claim 1(d) makes it distinguish over prior art and further argues that in Kordina no teaching exists to suggest that RF field may be controlled to substantially reduce eddy current in the conductor portion to zero. In a similar way applicant argues against the Kong reference also. Examiner disagrees.

This limitation is basically same as in 1(c) and has been already considered and found patentable. As explained above, the teaching that RF field may be controlled is inherent and explained very well by (Jancosek et al. U.S. 4,845,332 Col. 5, lines 5-33).

Claim 1 recites:

1. A heating device for controllably heating an article, the heating device defining a processing chamber to hold the article and comprising:
 - a) a housing including:
 - a susceptor portion surrounding at least a portion of the processing chamber; and
 - a conductor portion interposed between the susceptor portion and the processing chamber; and
 - b) an EMF generator configured to induce eddy currents within the susceptor portion such that substantially no eddy currents are induced in the conductor portion;
 - c) wherein the conductor portion is operative to conduct heat from the susceptor portion to the processing chamber; and
 - d) wherein eddy currents induced by the EMF generator are present in the susceptor portion and substantially no eddy currents are present in the conductor portion.

The Action's contentions that "[t]he structure disclosed by Kordina et al is therefore inherently capable of this intended use" and "the teaching that RF field may be controlled is inherent" fail on at least two grounds to present a proper rejection under Section 102.

First, Claim 1 positively recites "an EMF generator configured to induce eddy currents within the susceptor portion such that substantially no eddy currents are induced in the conductor portion". Even if the Kordina apparatus could be configured to induce eddy currents in the claimed manner, there is simply no teaching or suggestion whatsoever in Kordina to do so. Even if, *arguendo*, the Kordina apparatus could be configured to induce eddy currents in the manner claimed simply by selecting or adjusting operating settings (*e.g.*, power), such selections or adjustments themselves are not inherent. Applicants claim a heating device including an EMF generator configured in a particular manner to induce certain eddy currents, not simply a heating device including an EMF generator that could be configured to induce such eddy currents. In rejecting Claim 1 on the grounds that Kordina is "capable of" an "intended use" and that "the teaching that RF field may be controlled", the Action has overlooked clearly recited limitations of Claim 1 and fallen well short of the showing required for a proper Section 102 rejection (as discussed above).

Second, Claim 1 recites "wherein eddy currents induced by the EMF generator are present in the susceptor portion and substantially no eddy currents are present in the conductor portion." The presence of eddy currents in the susceptor portion but not in the conductor portion is a positively recited limitation of the claimed invention. The recitation has not been provided merely in the manner of an "intended use" or a workpiece. The manner in which Applicants have recited the eddy currents leaves no ambiguity as to their inclusion in the claimed invention. Applicants respectfully submit that the patent laws do not allow for the arbitrary or selective denial of full patentable weight to properly recited claim limitations. Again, the Action has failed to address a limitation of Claim 1 and instead merely contends that the Kordina apparatus is "capable of" a particular use.

Accordingly, Claim 1 is allowable over Kordina and the rejection under Section 102 should be withdrawn. Claims 3-5, 8, 13, 17-18, and 21-23 depend from Claim 1 and are therefore allowable as well for at least the foregoing reasons.

Claim 18 is further distinguishable from Kordina for the reasons set forth in Applicants' Response dated June 26, 2003, the arguments from which are incorporated herein by reference.

It is unclear to Applicants in what manner Claim 29 is regarded as being anticipated by Kordina. Applicants note that Claim 29 depends from Claim 24, which does not stand rejected under Section 102.

Similarly, it is unclear in what manner Claims 43 and 45 are regarded as being anticipated by Kordina. Accordingly, Applicants incorporate herein by reference the arguments set forth with regard to Claims 43-45 in Applicants' Response dated June 26, 2003.

The Section 102 Rejection over Kong

Claims 1-5, 8-10, 12, 17 and 21-23 stand rejected as being anticipated by Kong. As best understood, the Action applies the same arguments in support of the Section 102 rejection over Kong as applied in support of the Section 102 rejection over Kordina.

Kong does not disclose a heating device as recited in Claim 1. Applicants' arguments set forth above with regard to Kordina likewise apply to Kong, if not more so. In particular, in Kong eddy currents are deliberately induced in both the susceptor 54 (which the Action cites as corresponding to the claimed conductor portion) and the cylinder 57 (which the Action cites as corresponding to the claimed susceptor portion). *See, e.g.*, Kong at col. 3, lines 27-39 and col. 5, line 55 to col. 6, line 9. Thus, rather than somehow inherently disclosing the claimed invention, Kong may be regarded as teaching away from the claimed invention. In any event, Kong fails to disclose (explicitly or by inherency) a heating device either including "an EMF generator configured to induce eddy currents within the susceptor portion such that substantially no eddy currents are induced in the conductor portion" or "wherein eddy currents induced by the EMF generator are present in the susceptor portion and substantially no eddy currents are present in the conductor portion "

Accordingly, Claim 1 is allowable over Kong and the rejection under Section 102 should be withdrawn. Claims 3-5, 8, 13, 17-18, and 21-23 depend from Claim 1 and are therefore allowable as well for at least the foregoing reasons.

Claim 2 has been previously canceled.

It is unclear to Applicants in what manner Claim 13 is regarded as being anticipated by Kong. Applicants submit that Kong in no way discloses a heating device as recited in Claim 13.

Claim 18 is further distinguishable from Kong for the reasons set forth in Applicants' Response dated June 26, 2003, which is incorporated herein by reference.

The Rejections under Section 103

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claim, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). As recently emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, **would have selected these components for combination in the manner claimed**. *In re Kotzab*, 55, USPQ2d 1313, 1317 (Fed. Cir. 2000).

The Section 103 Rejection over Kordina

The Action acknowledges that Kordina fails to disclose that the liners (plates 16, 17) are removable without disassembly of the susceptor (wall pieces 11, 12, 13, 14). However, the Action contends:

However making elements of an apparatus separable has been held obvious *In re Dulberg* 129 USPQ 148 [sic] (CCPA 1961).

While it may be true that making elements of an apparatus separable has been held obvious, it clearly does not follow (and is not the law) that making elements of an apparatus separable is in all cases obvious. Applicants question whether the analysis of *In re Dulberg*, 129 U.S.P.Q. 348 (CCPA 1961), a 1961 opinion of the Court of Customs and Patent Appeals, is still appropriate in view of the guidelines for evaluating obviousness as recently, repeatedly and clearly stated by the Federal Circuit (as discussed above).

In any event, the present case is clearly distinguishable from *In re Dulberg*. In *In re Dulberg*, the cited reference taught a holder and a separately formed cap that was press fit onto the holder. The CCPA stated that, if desirable, it would have been obvious to have made the cap removable, and that this "could be done by anyone having the ordinary skills of this art simply by making the fit sufficiently loose to permit the ready manual removal of the cap." *Id.* at 349. In the present case, the Kordina apparatus could not be modified to make the plates 16, 17 removable (without disassembly of the wall pieces 11-14) with only a simple modification as proposed in *In re Dulberg*. In Kordina, the plates 16, 17 are sandwiched between the top and bottom wall pieces 13, 14 and the lateral wall pieces 11, 12 such that the susceptor wall pieces 11, 12, 13, 14 must be disassembled to remove the plates 16, 17. See Kordina at col. 5, lines 45-65. It is not apparent how the Kordina apparatus might be modified to satisfy the recitations of Claim 24, nor does the Action suggest any suitable modification that would achieve the claim recitation "wherein the liner is removable from the susceptor without requiring disassembly of the susceptor."

Moreover, both the CCPA and the Federal Circuit have consistently held that when a Section 103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the primary reference, such a proposed modification is not proper and the *prima facie* case of obviousness cannot properly be made. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). It is likely that any modification to Kordina that would allow the plates 16, 17 to be removed from the wall pieces 11-14 without disassembly would destroy, at least in part, the functionality of the Kordina apparatus. The plates 16, 17 are deliberately inserted between the side wall pieces 11, 12 and the top wall piece 13 and between the side wall pieces 11, 12 and the bottom wall piece 14 to prevent etching of the SiC-coating and the walls of the susceptor close to the edges of the SiC plates (*see, e.g.*, col. 3, lines 30-44 and col. 6, lines 9-16).

In view of the foregoing, the rejection under Section 103 is clearly improper and should be withdrawn.

The Section 103 Rejection over Kordina in view of Holzlein

Regarding Claims 6, 7, and 44, the Action reiterates the rejection set forth in the Office Action mailed April 8, 2003. The Action further states:

Regarding claim 7 applicant argues that it would not have been obvious to modify Kordina to have a coating of TaC in view of the fact that the susceptor does not come in contact with gas stream in the chamber. This argument is not persuasive because the conductor plates do not cover all surfaces of the susceptor.

As noted in Applicants' Response dated June 26, 2003, Claim 6 is directed to a heating device wherein the susceptor is coated with TaC, and a conductor is interposed between the susceptor and the processing chamber. By design, the coating of Holzlein interfaces with the gas stream and thereby Holzlein teaches nothing with respect to materials for use in coating a susceptor separated from a processing chamber by a conductor portion. At most (and still unlikely), Holzlein would suggest to the ordinarily artisan to employ a TaC coating on the exposed surfaces of the

Kordina susceptor (i.e., the inner surfaces of the lateral wall pieces 111, 112). Holzlein would not suggest a TaC coating on the inner surfaces of the wall pieces 13, 14, the plates 16, 17 being interposed between these wall pieces 13, 14 and the processing chamber. Notably, the wall pieces 13, 14 are fully covered by the plates 16, 17.

The Section 103 Rejection over Kordina in view of Frijlink

Regarding Claims 14, 17-20 and 26, the Action reiterates the rejection set forth in the Office Action mailed April 8, 2003. The Action further states:

Regarding claims 14 and 19 applicant's argument that no opening in liner is disclosed is not persuasive because there are openings at least related to gas inlets.

As best understood, the Action contends that it would have been obvious to modify Kordina in view of Frijlink to have a rotating platter, and as a result it would be necessary to form an opening in the plate 17 of Kordina for a gas inlet to drive the platter. However, Frijlink does not appear to contemplate a liner as claimed, Kordina does not contemplate a rotating platter, and there is no suggestion in either reference to that would lead the ordinarily skilled artisan to combine the two references in the manner suggested. Applicants respectfully submit that the rejection is improperly based on hindsight in view of Applicants' disclosure.

The Allowed Claims

The Action indicates that Claims 15, 16, 27 and 28 would be allowable if rewritten in independent form. Claims 15 and 27 have been rewritten in independent form. Claims 16 and 28 depend from Claims 15 and 27, respectively.

New Claims 46 and 47

New claim 46 recites a heating device including a housing assembly as recited in Claim 27 as amended. New claim 47 depends from Claim 46. Accordingly,

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Applicants respectfully submit that no further search is required and request entry and allowance of new Claims 46 and 47.

CONCLUSION

Applicants submit that the present application is in condition for allowance and the same is earnestly solicited. Should the Examiner have any matters outstanding of resolution, he is encouraged to telephone the undersigned at 919-854-1400 for expeditious handling.

Respectfully submitted,

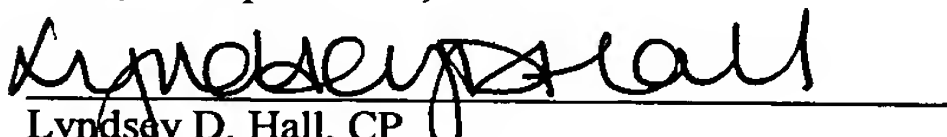


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